

C++ ASSIGNMENT

1.Ques :Valid Parentheses [Leetcode - 20]

Ans: class Solution {

public:

```
    bool isValid(string s) {  
        int n=s.size();  
        if(n==1) return false;  
        stack<char> st;  
        for(int i=0;i<n;i++){  
            if(s[i]=='(' || s[i]=='{' || s[i]=='[') st.push(s[i]);  
            else if(s[i]==']') {  
                if(st.size()>0 && st.top()=='[') st.pop();  
                else return false;  
            }  
            else if(s[i]=='}') {  
                if(st.size()>0 && st.top()=='{') st.pop();  
                else return false;  
            }  
            else {  
                if(st.size()>0 && st.top()=='(') st.pop();  
                else return false;  
            }  
        }  
        if(st.size()==0) return true;  
        else return false;  
    }  
};
```

2.Ques :Final Prices with a Special Discount in a Shop [Leetcode - 1475]

Ans: class Solution {
public:
 vector<int> nextLargerNodes(ListNode* head) {
 ListNode* temp=head;
 stack<int> st;
 vector<int> arr;
 while(temp!=NULL){
 arr.push_back(temp->val);
 temp=temp->next;
 }
 int n=arr.size();
 vector<int> nge(n);
 nge[n-1]=0;
 st.push(arr[n-1]);
 for(int i=n-2;i>=0;i--){
 while(st.size()>0 && st.top()<=arr[i]) st.pop();
 if(st.size()==0) nge[i]=0;
 else nge[i]=st.top();
 st.push(arr[i]);
 }
 return nge;
 }
};

3.Ques :Find the minimum value out of all elements in the array.Find the minimum value out of all elements in the array.

Ans: class Solution {
public:

```

vector<int> finalPrices(vector<int>& prices) {
    int n=prices.size();
    stack<int> st;
    vector<int> ans(n);
    ans[n-1]=0;
    st.push(prices[n-1]);
    for(int i=n-2;i>=0;i--){
        while(st.size()>0 && st.top()>prices[i]) st.pop();
        if(st.size()==0) ans[i]=0;
        else ans[i]=st.top();
        st.push(prices[i]);
    }
    for(int i=0;i<n;i++){
        ans[i]=prices[i]-ans[i];
    }
    return ans;
}
};

```

4.Ques:Next Greater Element II [Leetcode - 503]

Ans: class Solution {

public:

```

vector<int> nextGreaterElements(vector<int>& nums) {
    int n=nums.size();
    vector<int> ans(n,-1);
    stack<int> st;
    for(int i=2*n-1;i>=0;i--){
        while(st.size()>0 && st.top()<=nums[i%n]) st.pop();
        if(st.size()!=0 && i<n) ans[i%n]=st.top();
        st.push(nums[i%n]);
    }
}

```

```
        return ans;
    }
};
```